

PHASE I
SITE INSPECTION PRIORITIZATION REPORT
AND PASCORE PACKAGE
LARRY LANDRY DUMP SITE
INTRACOASTAL CITY, VERMILION PARISH, LOUISIANA
EPA ID NO.: LAD985169804

Prepared for:

U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

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April 1995

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INTRODUCTION

Roy F. Weston, Inc. (WESTON®) is pleased to present this report which summarizes the results of the file review and PAscore package completed for the Larry Landry Dump (LLD) site (LAD985169804), Intracoastal City, Vermilion Parish, Louisiana. This effort is part of the Site Inspection Prioritization (SIP) Work Assignment for various sites in U.S. Environmental Protection Agency Region VI (EPA Region VI) and is based solely on file information provided by EPA.

SITE BACKGROUND INFORMATION

The LLD site is located off Highway 333, 1 mile north of Intracoastal City, Vermilion Parish, Louisiana (Attachment 1). The site is approximately 0.46 acre in size. The site was in operation during the early 1980s. The property owner, (b) (6), leased the site to Larry Landry, who used the site for open dumping of various solid and liquid oil field wastes from offshore drilling rigs.

Operations ceased when the owner proposed raising the rent on the site. Waste disposal practices consisted of hauling the waste in a truck and indiscriminately dumping the waste on the ground. There were four individual waste sources on-site: one large salt-stained area and three smaller waste piles. There are reportedly no containment structures for any of the waste sources.

At the request of a concerned citizen, on 14 August 1984, several soil and water samples were taken by the Subra Company. Analyses of the samples indicated high concentrations of salt, oil, grease, barium, cadmium, chromium, lead, and zinc. The samples were not analyzed for organic constituents. A Preliminary Assessment (PA) conducted on 2 January 1990 identified waste source areas and potential migration pathways. As part of the EPA Site Screening Inspection (SSI) on 30 September 1991, the Field Investigation Team (FIT) collected more soil and water samples. These samples were analyzed for source characterization and potential migratory pathways.

HRS SCORING

Using the data provided by EPA Region VI from the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) files, WESTON developed a Hazard Ranking System (HRS) score (Attachment 2) for the site using PAscore (Version 2.0). The site received a score of 12. The waste characteristics and migration pathway scoring factors are discussed in the following paragraphs.

SOURCE WASTE CHARACTERISTICS

In the 1991 SSI Report, the identified waste sources included salt-stained contaminated soils covering most of the central area of the site and three waste piles on the eastern edge of the site. No containment structures were associated with any of the sources. The total area of the waste

was estimated to be about 15,000 square feet. The contaminants of concern common to each source were arsenic, barium, beryllium, cadmium, chromium, lead, and vanadium.

MIGRATION AND EXPOSURE PATHWAYS

The groundwater pathway scored a 0 and no release to groundwater is suspected. According to the 1991 SSI, a geologic cross-section of the site's location revealed the site is underlain by approximately 200 feet of clay. The depth to groundwater, which is drawn from the Chicot Aquifer, was estimated at 200 feet in the vicinity. In addition the groundwater in the area is primarily used for domestic, non-drinking purposes. The nearest well, 2,200 feet east of the site, is 500 feet deep.

The surface water pathway scored a 25. The FIT determined that the surface water pathway was the most likely migration route for contaminants, because the LLD site was surrounded by surface water. The surface water nearby sustains several sensitive environments, including wetlands, critical habitats, and crawfish farms. Ten miles of wetlands line the nearby Vermilion River and support aquatic life. A critical habitat for federal endangered species such as the Peregrine Falcon and the Atlantic Ridley Turtle is located 8 miles south of the site along Vermilion Bay. Area crawfish farming depends on the canals to flood the low-lying areas. The irrigation ditches and canals encompassing the site were identified as possible migratory routes for contaminants. However, surface water samples from these media in the 1991 SSI revealed no elevated contaminant levels. The 1991 SSI concluded there was no waste migration to the surface water pathway.

The soil exposure pathway scored a 2. Soil exposure is not considered a major pathway because there are no workers onsite. The site was surrounded by barbed wire and not readily accessible to the general public. No terrestrial sensitive environments were found onsite. The nearest residence is 2,200 feet from site.

The air pathway scored a 3 and is considered a minor pathway of concern. Particulate migration from the soil is expected to remain low because of heavy rainfall in southern Louisiana. There were no known releases of site contaminants to the air.

CONCLUSIONS

The LLD site, located near Intracoastal City, Vermilion Parish, Louisiana, received an HRS score of 12 using PAscore (Version 2.0). The site was used for indiscriminate dumping of various oil field drilling wastes during the early 1980s. Analytical results of soil samples collected from the site indicate elevated levels of metals. Surface water drove the overall site score and is the major pathway of concern. The groundwater pathway is not considered a major pathway because of the lack of groundwater use in the area. The air and soil exposure pathways are also considered to be minor pathways of concern.

ATTACHMENT 1

ATTACHMENT 2

11 12

HAZARDOUS WASTE

Site Name: Larry Landry Dump
CERCLIS ID No.: LAD985169804
Street Address: Hwy 133, 1 mi N of Intracoastal
City/State/Zip: Intracoastal City , La

Investigator: Troy D. Hile
Agency/Organization: Roy F. Weston, Inc.
Street Address: 70 NE Loop 410, Suite 460
City/State: San Antonio, Tx

Date: 4/19/95

PA-Score 2.0 Scoresheets
Larry Landry Dump - 04/19/95

Page: 1

OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM				IDENTIFICATION			
				State: LA		CERCLIS Number: LAD985169804	
				CERCLIS Discovery Date:			
1. General Site Information							
Name: Larry Landry Dump				Street Address: Hwy 133, 1 mi N of Intracoastal C			
City: Intracoastal City		State: La	Zip Code:	County: Vermilion	Co. Code:	Cong. Dist:	
Latitude: 29 47' 52.0"		Longitude: 92 9' 3.0"		Approx. Area of Site: 20000 sq feet		Status of Site: Inactive	
2. Owner/Operator Information							
(b) (6)				Operator: Larry Landry			
Street Address:				Street Address: Hwy 133			
City:				City: Intracoastal City			
State:	Zip Code:	Telephone:		State: La	Zip Code:	Telephone:	
Type of Ownership: Private				How Initially Identified: Citizen Complaint			

PA-Score 2.0 Scoresheets
Larry Landry Dump - 04/19/95

Page: 2

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM		IDENTIFICATION	
		State: LA	CERCLIS Number: LAD985169804
		CERCLIS Discovery Date:	
3. Site Evaluator Information			
Name of Evaluator: Troy D. Hile		Agency/Organization: Roy F. Weston, Inc.	Date Prepared: 4/19/95
Street Address: 70 NE Loop 410, Suite 460		City: San Antonio	State: Tx
Name of EPA or State Agency Contact: Stacey Bennett		Telephone: (214) 665-8374	
Street Address: 1445 Ross Ave., Suite 1200		City: Dallas	State: Tx
4. Site Disposition (for EPA use only)			
Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommendation: Higher Priority SI	Signature:	
Date:	Date:	Name:	
		Position:	

POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:
LA | LAD985169804

CERCLIS Discovery Date:

5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site:	Site Setting:	Years of Operation:
Industrial	Rural	Beginning Year: 0
Residential		Ending Year: 0
Agricultural		X Unknown

Type of Site Operations:
Other Landfill
Other:
Oil drilling wastes stored on-site

Waste Generated:
Offsite

Waste Deposition Authorized
By: Present Owner

Waste Accessible to the Public
No

Distance to Nearest Dwelling,
School, or Workplace:
2200 Feet

6. Waste Characteristics Information

Source Type	Quantity	Tier	General Types of Waste:
Contaminated soil	1.40e+04 sq ft	A	Metals
Pile	1.22e+03 sq ft	A	Organics
			Inorganics
			Oily Waste
			Other:
			Oil drilling wastes (solid and liquid)

Physical State of Waste as Deposited
Solid
Liquid

Tier Legend
C = Constituent W = Wastestream
V = Volume A = Area

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT FORM		IDENTIFICATION	
		State: LA	CERCLIS Number: LAD985169804
		CERCLIS Discovery Date:	
7. Ground Water Pathway			
Is Ground Water Used for Drinking Water Within 4 Miles: No	Is There a Suspected Release to Ground Water: No	List Secondary Target Population Served by Ground Water Withdrawn From:	
Type of Ground Water Wells Within 4 Miles: Municipal Private	Have Primary Target Drinking Water Wells Been Identified: No	0 - 1/4 Mile	0
		>1/4 - 1/2 Mile	0
		>1/2 - 1 Mile	0
Depth to Shallowest Aquifer: 200 Feet		>1 - 2 Miles	0
		>2 - 3 Miles	0
Karst Terrain/Aquifer Present: No	Nearest Designated Wellhead Protection Area: None within 4 Miles	>3 - 4 Miles	0
		Total	0

POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:
LA | LAD985169804

CERCLIS Discovery Date:

8. Surface Water Pathway

Part 1 of 4

Type of Surface Water Draining
Site and 15 Miles Downstream:

Stream

River

Bay

Other:

Canals

Shortest Overland Distance From Any
Source to Surface Water:

800 Feet

0.2 Miles

Is there a Suspected Release to
Surface Water: No

Site is Located in:
>10 yr - 100 yr floodplai

8. Surface Water Pathway

Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: No

Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:
None

POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:
LA | LAD985169804

CERCLIS Discovery Date:

8. Surface Water Pathway

Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: Yes

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:

Fishery Name	Water Body Type/Flow(cfs)
Vermilion River	minimal stream/ <10
Intercoastal Waterwa	small-moderate stream/ 10-100
Vermilion Bay	minimal stream/ <10

8. Surface Water Pathway

Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) Yes

Have Primary Target Wetlands Been Identified? (y/n) No

Secondary Target Wetlands:

Water Body/Flow(cfs)	Frontage(mi)
3-mi mixing zone/ =>10 cfs	>8 to 12

Other Sensitive Environments Along the Surface Water Migration Path: Yes

Have Primary Target Sensitive Environments Been Identified: No

Secondary Target Sensitive Environments:

Water Body/Flow(cfs)	Sensitive Environment Type
Coastal,ocean,Gr.Lakes	National/State Wildlife Refuge

POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: | CERCLIS Number:
LA | LAD985169804

CERCLIS Discovery Date:

9. Soil Exposure Pathway

Are People Occupying Residences or
Attending School or Daycare on or
Within 200 Feet of Areas of Known
or Suspected Contamination: No

Number of Workers Onsite: None

Have Terrestrial Sensitive Environments Been Identified on or Within
200 Feet of Areas of Known or Suspected Contamination: No

10. Air Pathway

Total Population on or Within:	Is There a Suspected Release to Air: No
Onsite 0	
0 - 1/4 Mile 15	Wetlands Located
>1/4 - 1/2 Mile 72	Within 4 Miles of the Site: Yes
>1/2 - 1 Mile 54	
>1 - 2 Miles 194	Other Sensitive Environments Located
>2 - 3 Miles 128	Within 4 Miles of the Site: Yes
>3 - 4 Miles 119	
Total 582	

Sensitive Environments Within 1/2 Mile of the Site:

Distance	Sensitive Environment Type/Wetlands Area(acres)
>1/4 - 1/2	Wetlands (1 to 50 acres)
>1/4 - 1/2	Habitat for Federally designated endangered/threatened species

WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations:

1 Soil	Contaminated soil	Ref: 1	WQ value	maximum
Area	1.40E+04 sq ft		4.12E-01	4.12E-01
2 Waste piles (3)	Pile	Ref: 1	WQ value	maximum
Area	1.22E+03 sq ft		9.35E+01	9.35E+01

WQ total 9.40E+01

** Only First WC Page Is Printed ** | Waste Characteristics Score: WC = 18

Ground Water Pathway Criteria List
Suspected Release

Are sources poorly contained? (y/n/u)	Y
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)	N
Is waste quantity particularly large? (y/n/u)	N
Is precipitation heavy? (y/n/u)	Y
Is the infiltration rate high? (y/n/u)	N
Is the site located in an area of karst terrain? (y/n)	N
Is the subsurface highly permeable or conductive? (y/n/u)	N
Is drinking water drawn from a shallow aquifer? (y/n/u)	N
Are suspected contaminants highly mobile in ground water? (y/n/u)	U
Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)	N
Other criteria? (y/n)	N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

The groundwater was to be sampled by the FIT and summarized in the Site Screening Inspection (30 September 1991). However, the FIT drilled to 20 feet on three different site locations and found no groundwater. In addition clays were the predominant soil types on site. These findings led the FIT to omit groundwater sampling (with concurrence from the EPA) and to determine that the surface water pathway was a more logical route for contaminant migration. There are no identified drinking water wells within 4 miles of the site.

Ref: 1

Ground Water Pathway Criteria List
Primary Targets

Is any drinking water well nearby? (y/n/u)

Has any nearby drinking water well been closed? (y/n/u)

Has any nearby drinking water well user reported
foul-testing or foul-smelling water? (y/n/u)

Does any nearby well have a large drawdown/high production rate? (y/n/u)

Is any drinking water well located between the site and other wells
that are suspected to be exposed to a hazardous substance? (y/n/u)

Does analytical or circumstantial evidence suggest contamination
at a drinking water well? (y/n/u)

Does any drinking water well warrant sampling? (y/n/u)

Other criteria? (y/n)

PRIMARY TARGET(S) IDENTIFIED? (y/n)

Summarize the rationale for Primary Targets:

GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics

			Ref.
Do you suspect a release? (y/n)	No		
Is the site located in karst terrain? (y/n)	No		1
Depth to aquifer (feet):	200		1
Distance to the nearest drinking water well (feet):	21121		1
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		340	
LR =	0	340	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	0	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	0	5	
T =	0	5	

WASTE CHARACTERISTICS

WC =	0	18
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GROUND WATER PATHWAY SCORE:

0

PA-Score 2.0 Scoresheets
Larry Landry Dump - 04/19/95

Page: 5

Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist. (miles)	Population Served	Reference	Value
None				
*** Note : Maximum of 5 Wells Are Printed ***			Total	

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0		0
Greater than 1/4 to 1/2 mile	0		0
Greater than 1/2 to 1 mile	0		0
Greater than 1 to 2 miles	0		0
Greater than 2 to 3 miles	0		0
Greater than 3 to 4 miles	0		0
Total			0

Apportionment Documentation for a Blended System

The ground water (GW) in the area is used for non-drinking purposes. Therefore the residents (582) within a 4 mile radius cannot be scored as primary (no suspected release to GW) or secondary targets. The nearest well is 2200 feet from site and is 500 feet deep.

Ref: 1.

Surface Water Pathway Criteria List
Suspected Release

Is surface water nearby? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	N
Is the drainage area large? (y/n/u)	N
Is rainfall heavy? (y/n/u)	Y
Is the infiltration rate low? (y/n/u)	Y
Are sources poorly contained or prone to runoff or flooding? (y/n/u)	Y
Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u)	Y
Is vegetation stressed along the probable runoff path? (y/n/u)	Y
Are sediments or water unnaturally discolored? (y/n/u)	U
Is wildlife unnaturally absent? (y/n/u)	N
Has deposition of waste into surface water been observed? (y/n/u)	U
Is ground water discharge to surface water likely? (y/n/u)	N
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	N
Other criteria? (y/n)	N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

Surface water samples collected by the FIT and summarized in the Site Screening Report on 30 September 1991 do not show any migration of wastes to surface water.

Ref: 1

Surface Water Pathway Criteria List
Primary Targets

Is any target nearby? (y/n/u) If yes: Y
N Drinking water intake
Y Fishery
Y Sensitive environment

Has any intake, fishery, or recreational area been closed? (y/n/u) N

Does analytical or circumstantial evidence suggest surface water
contamination at or downstream of a target? (y/n/u) N

Does any target warrant sampling? (y/n/u) If yes: N
N Drinking water intake
N Fishery
N Sensitive environment

Other criteria? (y/n) N

PRIMARY INTAKE(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Intakes:

The 1991 Screening Site Inspection states that there are no known
drinking water intakes along the Vermilion River.

Ref: 1
continued -----

continued -----

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Fisheries:

There was no suspected release to surface water.

Ref: 1

Other criteria? (y/n) N

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Sensitive Environments:

The potential for the migration of wastes to the surface water pathway is higher than for any other pathway. However surface water was sampled and no migration of wastes was found.

Ref: 1

SURFACE WATER PATHWAY SCORESHEETS

Pathway Characteristics

Pathway Characteristics			Ref.
Do you suspect a release? (y/n)	No		
Distance to surface water (feet):	800		2
Flood frequency (years):	100		1
What is the downstream distance (miles) to:			
a. the nearest drinking water intake?	15.0		1
b. the nearest fishery?	0.8		1
c. the nearest sensitive environment?	0.5		1
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION 0 person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	0	5	
T =	0	5	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body Type/Flow	Population Served	Ref.	Value
None					
Total Primary Target Population Value					0
Total Secondary Target Population Value					0

*** Note : Maximum of 6 Intakes Are Printed ***

Apportionment Documentation for a Blended System

Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	0	210	
T =	0	210	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Vermilion River	N	<10 cfs	1	210
2 Intercoastal Waterway	N	10-100 cfs	1	30
3 Vermilion Bay	N	<10 cfs		210
Total Primary Fisheries Value				0
Total Secondary Fisheries Value				0
*** Note : Maximum of 6 Fisheries Are Printed ***				

Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	10	
T =	0	10	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 Wetlands	N	3-mi mixing zone	1	0
2 State refuge	N	Coastal, ocean, Gr. Lake	1	0
Total Primary Sensitive Environments Value				0
Total Secondary Sensitive Environments Value				0
*** Note: Maximum of 6 Sensitive Environments Are Printed ***				

PA-Score 2.0 Scoresheets
Larry Landry Dump - 04/19/95

Page: 15

Surface Water Pathway Threat Scores

Threat	Likelihood of Release (LR) Score	Targets (T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	500	5	18	1
Human Food Chain	500	210	18	23
Environmental	500	10	18	1

SURFACE WATER PATHWAY SCORE: 25

Soil Exposure Pathway Criteria List
Resident Population

Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u) N

Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u) N

Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u) N

Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u) N

Does any neighboring property warrant sampling? (y/n/u) N

Other criteria? (y/n) N

RESIDENT POPULATION IDENTIFIED? (y/n) N

Summarize the rationale for Resident Population:

Site is mainly surrounded by water. The closest resident is 2200 ft from site.

Ref: 1

SOIL EXPOSURE PATHWAY SCORESHEETS

Pathway Characteristics

	Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	No 1
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	No 1
Is the facility active? (y/n):	No 1

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION LE =	550	

Targets

2. RESIDENT POPULATION 0 resident(s) 0 school/daycare student(s)	0	
3. RESIDENT INDIVIDUAL	0	
4. WORKERS None	0	
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	5	
T =	5	

WASTE CHARACTERISTICS

WC =	18
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RESIDENT POPULATION THREAT SCORE:

1

NEARBY POPULATION THREAT SCORE:

1

Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE:

2

Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
None		
Total Terrestrial Sensitive Environments Value		
*** Note : Maximum of 7 Sensitive Environments Are Printed ***		

Air Pathway Criteria List
Suspected Release

Are odors currently reported? (y/n/u)	N
Has release of a hazardous substance to the air been directly observed? (y/n/u)	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	N
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	N
Other criteria? (y/n)	N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

There is no analytical evidence to suggest air contamination.
However, the source areas onsite are not covered and there is a
potential for a release of contaminants to the air. Therefore the
surrounding population is treated as secondary targets.

Ref: 1

AIR PATHWAY SCORESHEETS

Pathway Characteristics

			Ref.
Do you suspect a release? (y/n)			No
Distance to the nearest individual (feet):			2200
			1
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION	0	2	
5. NEAREST INDIVIDUAL	0	20	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	1	
8. RESOURCES	0	5	
T =	0	28	

WASTE CHARACTERISTICS

WC =	0	18
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AIR PATHWAY SCORE:

3

Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	0	1	0
Greater than 0 to 1/4 mile	15	1	1
Greater than 1/4 to 1/2 mile	72	1	1
Greater than 1/2 to 1 mile	54	1	0
Greater than 1 to 2 miles	194	1	0
Greater than 2 to 3 miles	128	1	0
Greater than 3 to 4 miles	119	1	0
Total Secondary Population Value			2

Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
None		
Total Primary Sensitive Environments Value		

*** Note : Maximum of 7 Sensitive Environments Are Printed***

Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
1 Wetlands	>1/4-1/2	1	0.1
2 Critical Habitat	>1/4-1/2	1	0.5
Total Secondary Sensitive Environments Value			1

PA-Score 2.0 Scoresheets
Larry Landry Dump - 04/19/95

Page: 23

SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	0
SURFACE WATER PATHWAY SCORE:	25
SOIL EXPOSURE PATHWAY SCORE:	2
AIR PATHWAY SCORE:	3
SITE SCORE:	12

SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? No

If yes, identify the well(s).

If yes, how many people are served by the threatened well(s)? 0

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?
- A. Drinking water intake No
 - B. Fishery No
 - C. Sensitive environment (wetland, critical habitat, others) No

If yes, identity the target(s).

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? No

If yes, identify the properties and estimate the associated population(s)

4. Are there public health concerns at this site that are not addressed by PA scoring considerations? No

If yes, explain:

REFERENCE LIST

1. Ecology and Environment, Inc., 1991. "Screening Site Inspection of Larry Landry Dump." Prepared for the US EPA, Region VI, Dallas, Tx.
2. USGS (U.S. Geological Survey). 1975. Intracoastal City, La. (7.5-minute quadrangle topographic map).

LARRY LANDRY DUMP
INTERCOASTAL CITY,
LA
LAD985170158
PAscore

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SCREENING SITE INSPECTION

OF

LARRY LANDRY DUMP

(LAD985169804)

**SUPERFUND
FILE**

SEP 08 1992

REORGANIZED

X Ref. to Vol 1

Prepared By

Marcus A. Pinzel, FIT Geologist

**Ecology and Environment, Inc.
Region VI**

September 30, 1991



ecology and environment, inc.

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International Specialists in the Environment

SCREENING SITE INSPECTION

OF

LARRY LANDRY DUMP

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. INTRODUCTION	1
1.1 SCREENING SITE INSPECTION OBJECTIVES	1
1.2 SITE DESCRIPTION AND HISTORY	1
1.3 SUMMARY OF PRELIMINARY ASSESSMENT	1
2. DATA COLLECTION	2
2.1 ON-SITE RECONNAISSANCE INSPECTION	2
2.2 SAMPLING INSPECTION	2
3. ANALYTICAL RESULTS	3
4. SOURCE WASTE CHARACTERISTICS, PATHWAYS AND TARGETS	4
4.1 SOURCE WASTE CHARACTERISTICS	4
4.2 GROUND WATER PATHWAY	4
4.3 SURFACE WATER PATHWAY	5
4.4 SOIL EXPOSURE PATHWAY	6
4.5 AIR PATHWAY	6
5. PROJECT MANAGEMENT	6
5.1 KEY PERSONNEL	6
5.2 COMMUNITY RELATIONS	7
6. CONCLUSION	7
REFERENCES	R-1
ATTACHMENTS	
A Photographs	
B Analytical Data	
C Quality Assurance/Quality Control of Data	
D Sample Support Documentation	

FIGURES

<u>Figure</u>	<u>Title</u>
1	Site Location Map
2	Site Sketch
3	Sample Locations

TABLES

<u>Table</u>	<u>Title</u>
1	Sample Descriptions
2	Analytical Results
3	Source Descriptions
4	Crawfish Production
5	Population

PREFACE

This Screening Site Inspection Report was prepared by Ecology and Environment, Inc. for the Environmental Protection Agency under Contract Number 68-01-7347.

1. INTRODUCTION

The Ecology and Environment, Inc. (E & E) Region VI Field Investigation Team (FIT) was tasked by the U. S. Environmental Protection Agency (EPA) under Technical Directive Document (TDD) F06-9002-14 to conduct the Screening Site Inspection (SSI) of the Larry Landry Dump site (LAD985169804) in Intracoastal City, Vermilion Parish, Louisiana.

1.1 SCREENING SITE INSPECTION OBJECTIVES

The SSI evaluates the potential risks associated with hazardous waste generation, storage and disposal at the site. It expands upon data collected during the Preliminary Assessment (PA) and identifies data gaps. Information obtained during the SSI supports the management decision of whether the site proceeds to the Listing Site Inspection (LSI) or receives the classification of No Further Action under the Superfund Amendments and Reauthorization Act (SARA).

1.2 SITE DESCRIPTION AND HISTORY

The Larry Landry Dump (LLD) is located off Louisiana Highway 333, one mile north of Intracoastal City, Vermilion Parish, Louisiana (Figures 1 and 2). The site is located on private land owned by (b) (6), who leased part of it to Mr. Larry Landry. Mr. Landry used the land as an open dump for various oil field and solid wastes from offshore drilling rigs (Ref. 6). The geographic coordinates are 29°47'52" north latitude and 92°09'03" west longitude (Figures 1 and 2).

LLD operated in the early 1980s, and ceased operations when (b) (6) raised the rent on the land (Ref. 6). Previous sampling inspections revealed high concentrations of salt, oil, grease, barium, cadmium, chromium, lead and zinc (Ref. 7, p. 1). The samples were not analyzed for organic constituents.

The site operator did not build containment structures to prevent waste migration via air, ground water or surface water routes. The waste material was indiscriminately disposed directly onto the ground (Ref. 6). The files do not contain information regarding the estimated waste quantity disposed. The FIT visually estimated that an area of approximately 20,000 square feet was used for the dumping of wastes. There are no visual signs of waste migration.

1.3 SUMMARY OF PRELIMINARY ASSESSMENT

The PA was completed by the FIT on January 2, 1990. The PA referred to piles of waste material that were disposed directly onto the ground. There were no containment structures on-site (Ref. 1, p. 4; Ref. 6).

The PA stated that the Vermilion River has been recharging the Chicot aquifer near Bancker, five miles north of the site, due to large scale ground water use for irrigation (Ref. 1, p. 4; Ref. 2, p. 21).

The PA identified the irrigation and drainage ditches surrounding the site as possible migration routes to the Vermilion River, which is a

designated primary and secondary recreation area used for propagation of fish and wildlife (Ref. 1, p. 5). Potentially sensitive environments consist of wetlands (estuarine), a state wildlife refuge, and habitats used by endangered species (Ref. 1, p. 5; Ref. 11, pp. 5-6). The PA reported a locked gate at the site with No Trespassing signs posted (Ref. 1, p. 5).

The PA stated that there are approximately 510 people within four miles of the site (Ref. 1, p. 5).

2. DATA COLLECTION

The on-site reconnaissance inspection and sampling inspection are addressed in this section.

2.1 ON-SITE RECONNAISSANCE INSPECTION

The on-site reconnaissance inspection was conducted on November 12, 1990 by FIT members Marcus A. Pinzel, Michael Mitchell and Kurt Soutendijk. During the inspection, the FIT met with (b) (6) representative, Mr. Jim Jones.

The first and second entrance gates to the site were locked and the final gate was closed, but not locked. The surrounding land is fenced-in pasture land.

The sources of contamination were salt stained soils, where much of the drilling mud may have been deposited, and piles of soil toward the eastern boundary of the site.

For health and safety purposes, the FIT team wore Level C protection, neoprene boots with rubber boot covers, tyvek coveralls and nitrile gloves. The ambient air was continuously monitored with an HNu and showed safe readings in the breathing zone.

2.2 SAMPLING INSPECTION

The sampling inspection was conducted on December 11, 1990 by FIT members Marcus A. Pinzel, Kurt Soutendijk, Greg Straughn, Christine Green, Chris Carlson and Julie Koke. Sample locations are shown in Figure 3 and described in Table 1.

Source waste characterization samples were collected from the salt stained area, which showed stressed vegetation, and the potential waste piles. The sample locations were selected to establish soil exposure levels. Samples were collected from the major areas of soil contamination.

Ground water samples were scheduled to be collected from four locations, one from a stock well screened 500 feet below ground level, one to serve as a background sample and two from samples taken with the geo probe sampling device. The FIT drilled to 20 feet in three locations, but ground water was not encountered. A stiff clay was present from the surface to 20 feet in all locations. Due to these findings, the FIT

concluded that surface water was a more likely route of migration. Surface water samples were collected as a replacement for ground water samples, per approval of changes from EPA Project Officer Bart Canellas. Ground water samples one through four were deleted and the collection of surface water samples were substituted.

The surface water objectives were to determine migration to the Vermilion River, the Intracoastal Waterway, nearby irrigation canals and site runoff pathways. The site runoff pathway objectives were met by collecting surface water and sediment samples from runoff pathways and impounded areas. The Vermilion River and Intracoastal Waterway pathways were characterized by collecting surface water and sediment samples from the irrigation ditches and runoff pathways that would flow into the river and the waterway. Air samples were not collected because volatile organics were not detected in the air by the HNu during the on-site reconnaissance inspection.

All field activities were conducted according to FIT Field Sampling Standard Operating Procedures. Organic samples were shipped to Southwest Research Institute in San Antonio, Texas and inorganic samples were shipped to Southwest Labs of Oklahoma in Broken Arrow, Oklahoma.

3. ANALYTICAL RESULTS

This section addresses the analytical results of the samples collected during the SSI. FIT chemists evaluated the data for compliance with RAS Quality Assurance/Quality Control (QA/QC) protocol. The QA/QC assessments are presented in Attachment C. Attachment D contains the sample documentation supporting the analytical results, including sample receipts, chain-of-custody documentation, traffic reports and air bills from sample shipments. The analytical data are presented in Table 2. Contaminants detected in samples collected from the migration pathways were considered to be migrating from on-site waste sources if their concentration was three times greater than background concentration, or five times the Contract Required Detection Limit (CRDL) if not detected in the background sample (Attachment B).

The surface water samples did not show any contaminants above background levels (Table 2). The soil sample with the greatest level of contamination was sample SS-8, collected from the area of stressed vegetation around Waste Pile 3. It contained high levels of arsenic (17.3 ppm), barium (12,700 ppm), cadmium (6.4 ppm), chromium (287 ppm), lead (817 ppm) and silver (6.5 ppm). The background samples were collected from soil samples 6 and 9 (Table 2).

Other contaminated samples containing similar contaminants were:

- SS-1 Northwest portion of salty-stained, stressed vegetation area: 4 ppm cadmium, 295 ppm chromium and 183 ppm lead (Table 2)
- SS-2 South-central portion of salty-stained, stressed vegetation area: 465 ppm chromium and 706 ppm manganese (Table 2)

- SS-5 Southern Waste Pile 1: 308 ppm chromium and 81.5 ppm copper (Table 2)
- SS-7 Northeastern Waste Pile 2: 7.5 ppm arsenic, 3.9 ppm cadmium, 127 ppm chromium and 241 ppm lead (Table 2)
- SS-10 North end of site along canal bordering site boundary: 345 ppm chromium and 744 ppm manganese (Table 2)

The air pathway was not evaluated because of lack of population and sensitive environments.

4. SOURCE WASTE CHARACTERISTICS, PATHWAYS AND TARGETS

Source waste characteristics, and the ground water, surface water, soil exposure and air pathways and targets are addressed in this section.

4.1 SOURCE WASTE CHARACTERISTICS

The FIT identified as waste sources the contaminated soils covering a large central area of the site and three waste piles toward the eastern edge of the site (Figure 3) (Table 3). The FIT measured the waste source dimensions during the SSI. The waste quantities at the site consist of the salt-stained area at approximately 14,000 square feet, Waste Pile #1 at 66 square feet, Waste Pile #2 at 480 square feet and Waste Pile #3 at 120 square feet. There are no on-site containment structures, including liners, present for any of the four waste sources. The contaminants detected at each source were arsenic, barium, beryllium, cadmium, chromium, lead and vanadium (Figure 3) (Tables 2 and 3). Source waste characterization samples were collected from the stressed vegetation and salt-stained area, the three waste piles, and along irrigation ditches.

4.2 GROUND WATER PATHWAY

The Chicot aquifer system consists mostly of thick sand and gravel deposits that dip and thicken southward from southern Vernon and Rapides Parishes. The aquifer thins slightly to the west and continues into Texas. To the east, the aquifer thickens toward the axis of the Mississippi Embayment trough, where it is cut or overlain by the alluvium of the Atchafalaya and Mississippi rivers; thus, the Chicot aquifer system and Atchafalaya aquifer are hydraulically connected (Ref. 2, p. 4). East of Calcasieu Parish, the massive sand of the Chicot aquifer system has been divided into two units called the upper sand and the lower sand. The upper sand is connected to the Abbeville Unit (Ref. 2, p. 4). This shallow sand (Abbeville Unit) is a distinct hydrologic unit throughout most of the lower Vermilion River Basin. The thickness of sand usually ranges from 100 to 250 feet (Ref. 2, p. 21). Due to large scale ground water use for irrigation, the Vermilion River has been recharging the Chicot aquifer near Bancker, five miles north of the site (Ref. 1, p. 4; Ref. 2, p. 21).

A geohydrologic cross section of the site's location revealed that LLD is underlain by 200 feet of clay. Underlying the clay are 150 feet of freshwater sand. This is the Abbeville Unit (Ref. 2, pp. 27-28).

The approximately 582 persons in the four mile radius use purchased drinking water only. The well water is for cooking, bathing and irrigation purposes only (Ref. 1, pp. 7-8). The nearest well is approximately 2,200 feet east of the site. It is owned by Mrs. Antoine Hebert, who stated that her well was dug in 1975 and is at a 500 foot depth (Ref. 1, p. 7; Ref. 10; Ref. 12). A net precipitation of 21.02 inches has been determined (Ref. 3).

4.3 SURFACE WATER PATHWAY

The site is surrounded by surface water (Attachment A, Photographs 1, 3, 4, 6, 8, 9, 10, 12). There are approximately 15,216 square feet of contaminated soil on-site (Tables 2 and 3) (Attachment A). Waste disposal areas are not contained and there is no evidence of a run-on or runoff control system (Attachment A, Photographs 1, 3, 4, 6, 8, 9, 10, 12) (Ref. 6). Site drainage flows into a north-south ditch that parallels the access road. The drainage ditch empties into an east-west ditch, which in turn enters the Vermilion River approximately one-half mile downstream. The Vermilion River is the next five miles of the 15 mile segment. The final nine miles of the surface water pathway are in Vermilion Bay (Ref. 12). The site is in the 100 year floodplain (Ref. 4).

A wetlands map of the area around the site does not exist, but most of the area, particularly near the canals, is marsh and freshwater wetlands (Ref. 5; Ref. 15). Approximately 10 miles of wetlands are located in the 15 mile stream segment along the Vermilion River. A state wildlife refuge and habitats are located approximately eight miles south of the site along the Vermilion Bay, and are used by the Peregrine Falcon (Falco peregrinus anatum) and Atlantic Ridley Turtle (Lepidochelys kempii) in coastal Vermilion Parish at certain times of the year (Ref. 1, p. 5; Ref. 11).

* There are no known drinking water intakes along the Vermilion River. The Vermilion River is designated as usable for primary and secondary recreation and for propagation of fish and wildlife (Ref. 9, pp. 96, 118). Crawfish is a major aquatic food resource within the target distance of the site. Crawfish are raised in rice fields which are flooded from the canals. A crawfish farm in Vermilion Parish can produce up to 2,000 pounds per acre per year, and averages approximately 800 pounds (Ref. 13). There are approximately 7,465 acres of potential crawfish farmlands within a four mile radius of the site (Table 4) (Ref. 12). A radial distance for potential human food chain production was used because tidal reversal of the Vermilion River has been recorded as far upstream as Lafayette (Ref. 16). Fishing and crabbing take place along the Vermilion River, Intracoastal Waterway and Vermilion Bay, encompassing the 15 stream mile distance. The area is used regularly for fishing, but the amount of fish caught annually cannot be determined (Ref. 14).

4.4 SOIL EXPOSURE PATHWAY

During the on-site reconnaissance inspection, the site was enclosed behind three barbed wire fences and three gates, two of which were locked. There are approximately 15,200 square feet of contaminated soil on-site (Table 3) (Attachment A). The nearest residence borders the east side of the site. The population within one mile is approximately 141, according to a house count (Table 5) (Ref. 4; Ref. 12). The nearest residence is approximately 2,200 feet east of the site (Ref. 12). There are no on-site employees. There are no known terrestrial sensitive environments on-site. The Peregrine Falcon and the Atlantic Ridley Turtle use the coastal areas of Vermilion Parish as a refuge and habitat (Ref. 11). The area surrounding the site is sparsely populated and there are no known recreational uses of the site (Ref. 12) (Attachment A).

4.5 AIR PATHWAY

There is no known release of site contaminants to the air pathway. No volatile compounds were detected in any of the samples collected during the SSI (Table 1). Heavy metals detected in the soil samples include arsenic, barium, cadmium, chromium, lead, silver, copper, manganese and mercury (Table 1). Particulate migration from the soil are expected to be low due to the heavy rainfall in southern Louisiana (Ref. 3), but during the dry summer periods, particulate migration of contaminants is a potential route of concern.

Wastes are found above-ground in three separate piles and are exposed to the air, as well as a large salt-stained, non-vegetated area (Table 3). The LLD is not in operation and has no on-site workers (Ref. 6). The nearest residence is approximately 2,200 feet east of the site (Figure 1) (Ref. 12). The Peregrine Falcon and the Atlantic Ridley Turtle use the coastal area in Vermilion Parish as a refuge and habitat (Ref. 11). According to topographic maps, there are an estimated 3,640 acres of wetlands within a four mile radius of the site (Ref. 12; Ref. 15). The population within four miles of the site is estimated at 582, according to a house count (Table 5) (Ref. 5; Ref. 12).

5. PROJECT MANAGEMENT

Key personnel and community relations are addressed in this section.

5.1 KEY PERSONNEL

The FIT Project Manager for this investigation was Marcus A. Pinzel. The Project Manager was responsible for obtaining site access, and for the overall planning, management and implementation of site activities. Kurt Soutendijk served as Site Safety Officer, which involved the development and implementation of the Site Safety Plan.

The EPA Region VI Project Officer for this investigation was Bartolome J. Cannellas.

5.2 COMMUNITY RELATIONS

Persons requesting site information will be instructed to submit a Freedom of Information Act Request to: Freedom of Information Officer, U.S. EPA Region VI, 1445 Ross Avenue, Dallas, Texas 75202-2733. Reporters will be instructed to contact the Office of External Affairs at 214/655-2200.

6. CONCLUSIONS

The Larry Landry Dump is owned by (b) (6), and was leased to Mr. Larry Landry in the early 1980s as a dump site for various oil field and offshore drilling rig solid wastes.

The sources of on-site wastes are contaminated soil and three waste piles. There are no containment structures, berms or liners in evidence.

Analytical results of the samples collected from the site revealed elevated concentrations of metals such as lead, chromium and arsenic. The ground water samples were not collected because of lack of ground water usage and the depth to ground water.

The primary pathway of concern is the surface water pathway. Any wastes migrating to the surface water could potentially enter irrigation canals used to flood crawfish farms in the area. Samples collected during the SSI did not show migration of wastes to surface water.

The soil exposure pathway is not considered a major pathway of concern because there is no on-site target population, and because site is not accessible to the public.

The air pathway is considered a minor pathway of concern because there is no known release of contaminants from the sources, and because particulate migration would be low due to heavy rainfall.

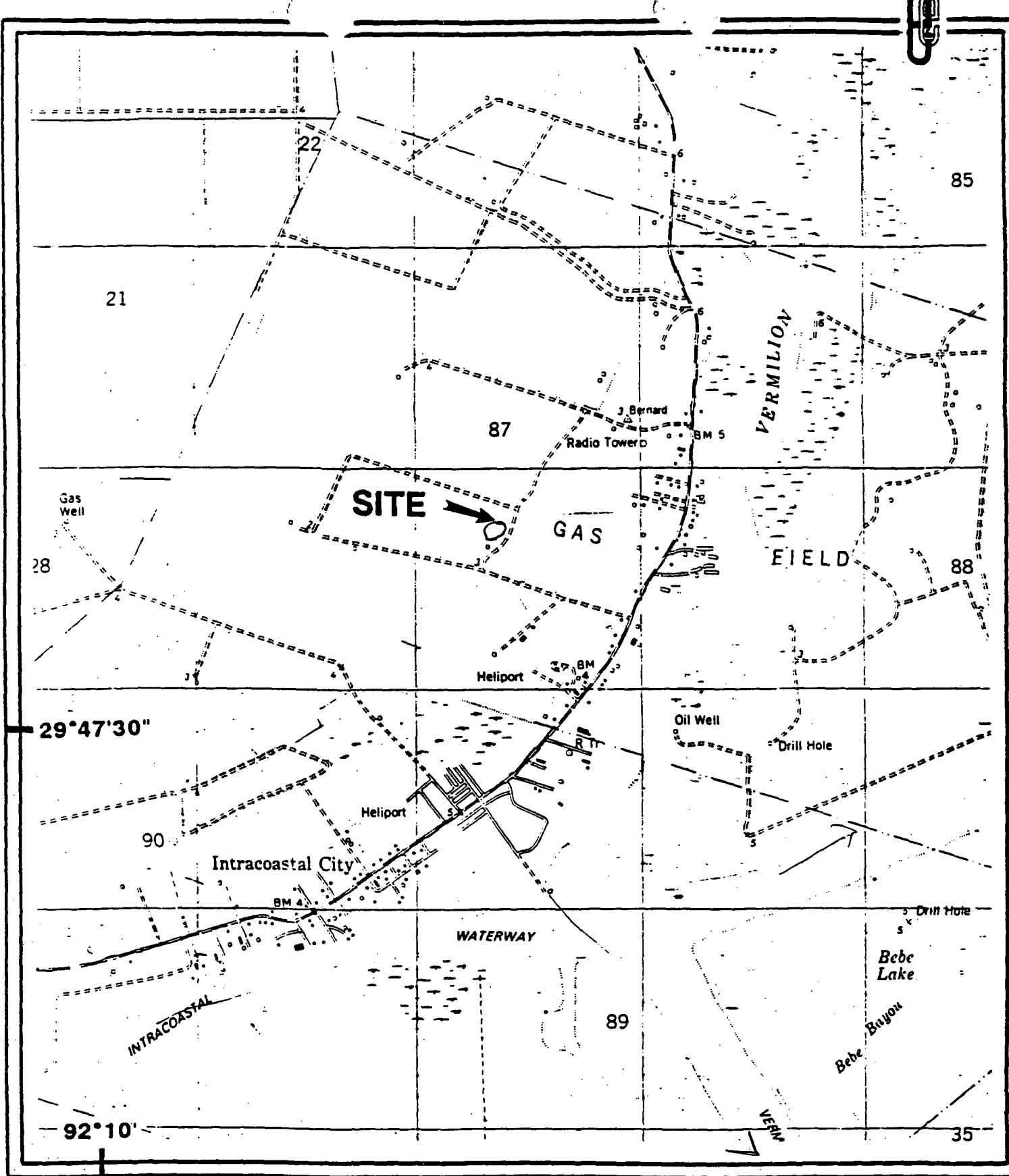


FIGURE 1
SITE LOCATION MAP
LARRY LANDRY DUMP
INTRACOASTAL CITY, LOUISIANA
LAD985169804



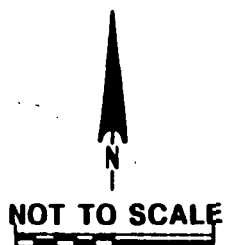
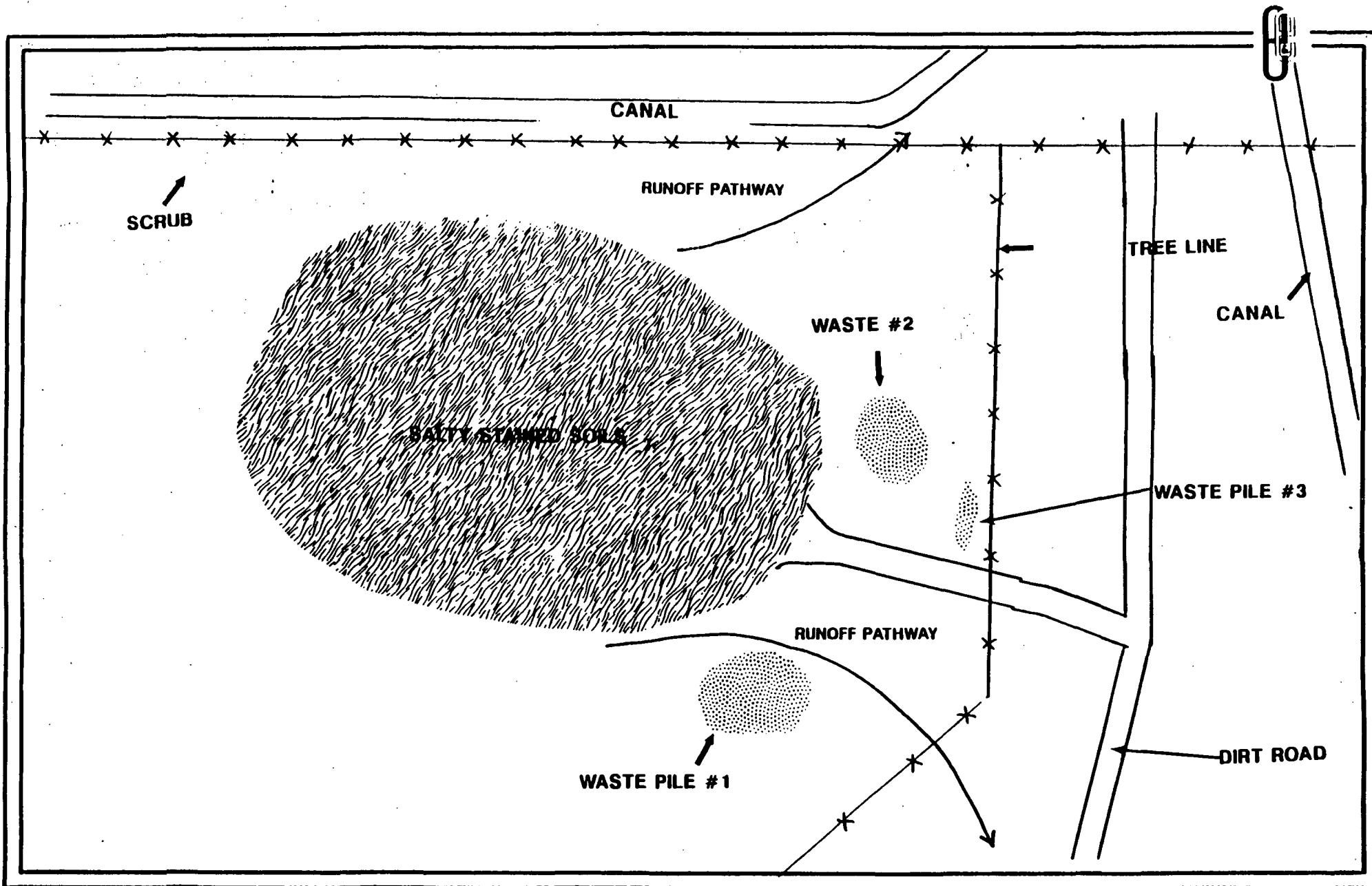
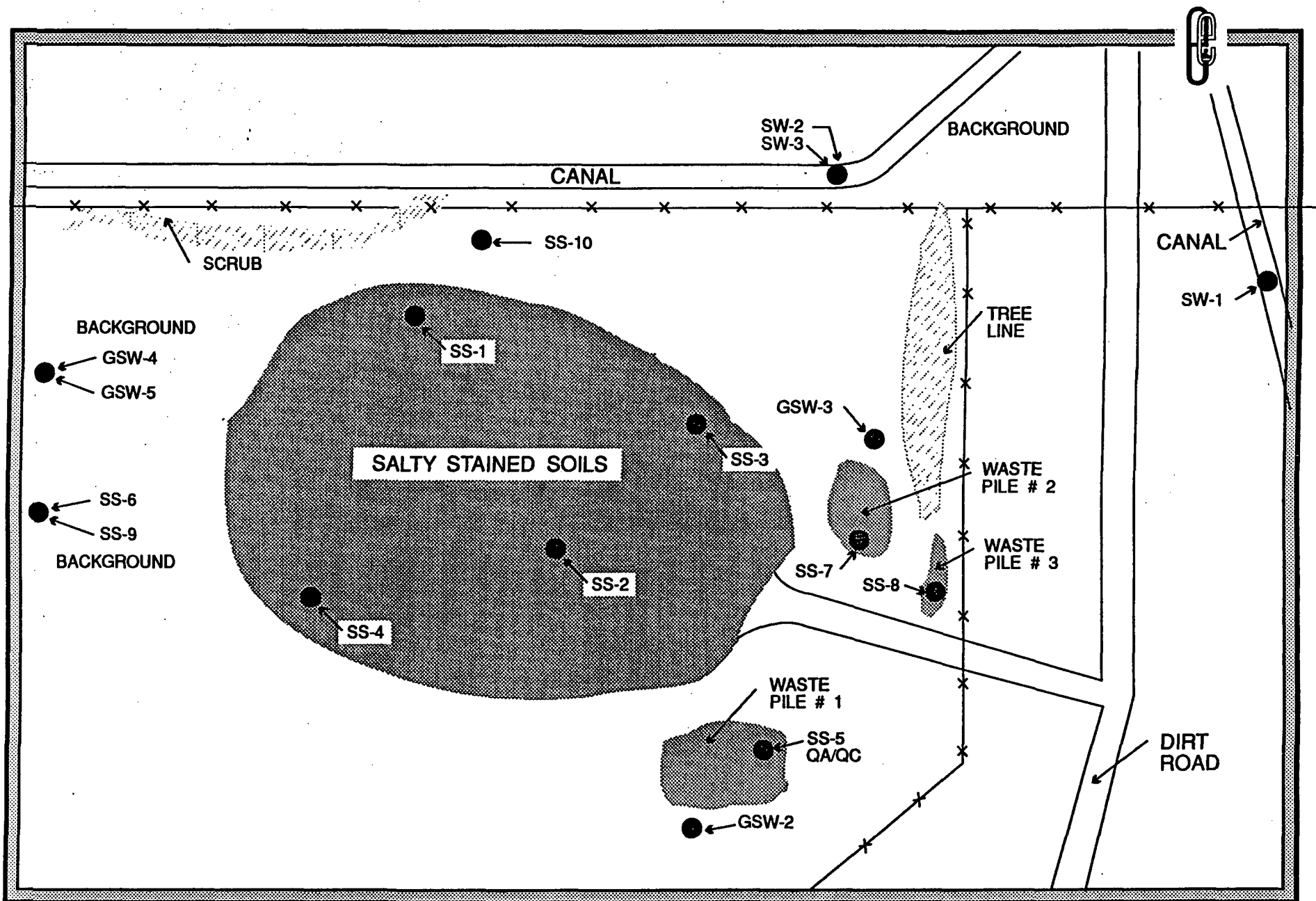


FIGURE 2
SITE SKETCH
LARRY LANDRY DUMP
INTRACOASTAL CITY, LOUISIANA
LAD985169804



FO372.CDR

FIGURE 3
SAMPLE LOCATIONS
 LARRY LANDRY DUMP
 INTRACOASTAL CITY, LOUISIANA
 LAD985169804

TABLE 1
SAMPLE DESCRIPTIONS

<u>Sample No.</u>	<u>Sample Type</u>	<u>Sample Location</u>	<u>HRS Rationale</u>
SS-1	soil: 0-6" interval	North salt stain	Surface Water Pathway
SS-2	soil: 0-6" interval	South salt stain	Surface Water Pathway
SS-3	soil: 0-6" interval	East salt stain	Surface Water Pathway
SS-4	soil: 0-6" interval	West salt stain	Surface Water Pathway
SS-5	soil: 0-6" interval	South pile	Surface Water Pathway
SS-6	soil: 0-6" duplicate of SS-9	Same as SS-9	Surface Water Pathway
SS-7	soil: 0-6" interval	North pile	Surface Water Pathway
SS-8	soil: 0-6" interval	Fence pile	Surface Water Pathway
SS-9	soil: 0-6" (Background)	Far West	Surface Water Pathway
SS-10	soil: 0-6" interval	North canal	Surface Water Pathway
GSW-2	surface water	Geo south	Surface Water Pathway
GSW-3	surface water	Geo north	Surface Water Pathway
GSW-4	surface water	Geo for west	Surface Water Pathway
GSW-5	surface water	Same as GSW-4	Surface Water Pathway
SW-1	surface water	Lower canal	Surface Water Pathway
SW-2	surface water (background)	Upper canal	Surface Water Pathway
SW-3	surface water	Same as SW-2	Surface Water Pathway
TB-1	trip blank		

TABLE 2

ANALYTICAL RESULTS

Contaminant	SS-1	SS-2	SS-3	SS-4
Aluminum	7,130	11,600	7,740	7,470
Antimony	----	----	----	----
Arsenic	6.1	1.4	0.96	2.5
Barium	7,160	9,180	857	694
Beryllium	0.53	0.67	0.4	0.56
Cadmium	4.0	1.5	0.93	----
Calcium	7,610	38,400	2,730	2,090
Chromium	295	465	19.1	17.3
Cobalt	13.1	13.9	2.3	4.2
Copper	47.6	28.1	44.7	13.2
Iron	13,200	10,400	5,700	7,240
Lead	183	112	22.8	20.9
Magnesium	1,010	3,630	367	1,290
Manganese	371	706	35	169
Mercury	1.6	0.99	0.61	0.16
Nickel	8.6	8.6	3.6	6.3
Potassium	1,050	1,910	669	1,000
Silver	1.7	0.93	0.84	----
Sodium	2,720	21,300	1,620	404
Thallium	----	----	----	----
Vanadium	15.4	12.7	8.9	11.2
Zinc	----	----	----	----
Acetone	0.045	0.036	----	----
Toluene	0.008	0.006	----	----
Phenol		----	1.7	----

Concentrations in parts per million (ppm)

TABLE 2 (continued)

Contaminant	SS-5	SS-6 (bkgd)	SS-7	SS-8
Aluminum	11,600	13,100	7,300	11,100
Antimony	----	----	----	----
Arsenic	5.4	3.0	7.5	17.3
Barium	7,580	2,370	7,530	12,700
Beryllium	0.68	0.62	0.49	0.48
Cadmium	2.60	0.96	3.9	6.4
Calcium	36,500	1,890	90,300	4,200
Chromium	308	25	127	287
Cobalt	16.1	6.5	14.0	19.1
Copper	81.5	26.7	44.0	70.1
Iron	16,500	12,300	13,000	16,200
Lead	134	50.1	241	817
Magnesium	2,310	1,400	2,040	1,800
Manganese	492	199	444	347
Mercury	1.1	----	1.7	1.4
Nickel	15.2	9.9	9.4	13.6
Potassium	1,260	1,570	759	1,330
Silver	1.4	1.2	1.9	6.5
Sodium	510	3,540	1,710	363
Thallium	----	----	----	----
Vanadium	19.6	18.3	12.8	17.7
Zinc	----	----	----	----
Acetone	----	----	----	----
Toluene	----	----	----	----
Phenol	----	----	----	----

Concentrations in parts per million (ppm)

TABLE 2 (continued)

Contaminant	SS-9 (bkgd)	SS-10	GSW-2	GSW-3	GSW-4 (bkgd)
Aluminum	6,620	10,300	0.084	0.049	0.445
Antimony	----	----	----	----	----
Arsenic	2.4	5.8	----	----	----
Barium	3,950	3,460	0.28	0.023	0.41
Beryllium	0.39	0.68	----	----	----
Cadmium	----	1.5	----	----	----
Calcium	1,650	2,050	51.40	50.5	134.0
Chromium	30.8	345	----	----	0.05
Cobalt	7.7	11.5	0.007	0.005	0.01
Copper	18.1	38.5	----	----	0.01
Iron	7,720	15,900	0.31	0.27	2.75
Lead	46.1	118	----	0.004	0.012
Magnesium	911	1,290	46.7	42.1	38.5
Manganese	163	744	0.10	0.183	2.81
Mercury	1.2	0.24	0.0002	0.0005	----
Nickel	4.2	12.7	----	----	----
Potassium	803	1,020	17.9	15.6	50.8
Silver	----	1.6	----	----	----
Sodium	4,750	234	331.0	296.0	371.0
Thallium	----	----	----	----	----
Vanadium	11.4	20	----	----	----
Zinc	----	----	0.011	0.06	0.51
Acetone	----	----	----	----	----
Toluene	----	----	----	----	----
Phenol	----	----	----	----	----

Concentrations in parts per million (ppm)

TABLE 2 (continued)

Contaminant	GSW-5 (bkgd)	SW-1	SW-2	SW-3
Aluminum	----	0.198	0.087	0.079
Antimony	----	----	----	----
Arsenic	----	----	----	----
Barium	0.299	0.214	0.275	0.281
Beryllium	----	----	----	----
Cadmium	----	----	----	----
Calcium	77.3	47.8	61.3	62.1
Chromium	----	----	----	----
Cobalt	----	----	----	----
Copper	----	----	----	----
Iron	0.15	0.243	0.421	0.41
Lead	----	0.0022	----	----
Magnesium	41.8	38.2	39.1	38.9
Manganese	0.13	0.0798	0.276	0.294
Mercury	----	----	0.0006	----
Nickel	----	----	----	----
Potassium	3.3	5.57	3.37	3.67
Silver	----	----	----	----
Sodium	220.0	227.0	216.0	214.0
Thallium	----	----	----	----
Vanadium	----	----	----	----
Zinc	----	0.012	0.018	----

Concentrations in parts per million (ppm)

TABLE 3

SOURCE DESCRIPTIONS

A. Salt Stained Area

Location - Covers majority of site, with salt-stained and stressed vegetation in evidence. No containment or liner in evidence.

Wastes - Contaminated Soil (approx.) 140' x 100' = 14,000 ft²

B. Waste Pile #1

Location - Southeast of salt-stained soils, irregular mounds of debris and stained soils showing stressed vegetation.

Wastes - Waste pile (approx.) 28' x 22' = 616 ft²

C. Waste Pile #2

Location - East of salt-stained soils, irregular mounds of debris and stained soils showing stressed vegetation.

Wastes - Waste pile (approx.) 24' x 20' = 480 ft²

D. Waste Pile #3

Location - East of salt-stained soils, near fence, irregular mounds of debris and stained soils showing stressed vegetation.

Wastes - Waste pile (approx.) 12' x 10' = 120 ft²

TOTAL 15,216 ft²

TABLE 4

CRAWFISH PRODUCTION

1 mile = 2.5 inches
 1 square mile = 6.25 square inches
 1 square mile = 640 acres
 6.25 square inches = 640 acres
 Acres/inches² = 640/6.25 = 102.4

<u>Distance</u>	<u>Inches²</u>	<u>Acres</u>
0 - 1	15.4	1,576.9
1 - 2	26.2	2,682.8
2 - 3	19.1	1,955.8
3 - 4	12.2	1,249.3
<u>TOTAL</u>		<u>≈7,465</u>

TABLE 5

POPULATION

<u>Distance</u>	<u>Number of Houses</u>	<u>Population/House</u>	<u>Population</u>
0 - 1/4	5	x 2.98	15
1/4 - 1/2	24	x 2.98	72
1/2 - 1	18	x 2.98	54
1 - 2	65	x 2.98	194
2 - 3	43	x 2.98	128
3 - 4	40	x 2.98	119
			<hr/>
		TOTAL	582

REFERENCE 2

